

WHAT IS CLAIMED IS:

1. A system for analog-to-digital signal conversion, the system comprising:
 2. logic configured to associate a first request with a plurality of input terminals and
 3. a second request with one of the input terminals;
 4. a converter configured to convert an analog signal presented at each of a portion
 5. of the input terminals associated with the first request in succession into a digital value until the
 6. one of the input terminals associated with the second request is reached; and
 7. logic configured to wait a predetermined amount of time to receive the second
 8. request;
 9. wherein the converter is configured to convert an analog signal presented at each
 10. of a remaining portion of the input terminals associated with the first request in succession into a
 11. digital value when one of an expiration of the predetermined amount of time and a receiving of
 12. the second request occurs.

- 1 2. The system of claim 1, wherein when the receiving of the second request occurs
- 2 before the expiration of the predetermined amount of time, the system comprises:
 - 3 logic configured to acknowledge a completion of the second request when the
 - 4 converting of the analog signal presented at each of the input terminals associated with the first
 - 5 request is complete.

1 3. The system of claim 1, wherein when the receiving of the second request occurs
2 after the expiration of the predetermined of amount of time, the system comprises:

3 logic configured to deny the second request when received before completing the
4 converting of the analog signal presented at each of the input terminals associated with the first
5 request.

1 4. The system of claim 1, wherein when a third request associated with a plurality of
2 input terminals is received while converting the analog signal presented at each of the remaining
3 portion of the input terminals associated with the first request, the system comprises:

4 logic configured to determine a priority between the converting of the analog
5 signal presented at each of the remaining portion of the input terminals associated with the first
6 request and the third request.

1 5. The system of claim 4, wherein when the converting of the analog signal
2 presented at each of the remaining portion of the input terminals associated with the first request
3 has the priority, the system comprises:

4 logic configured to deny the third request.

1 6. The system of claim 4, wherein when the third request has the priority, the system
2 comprises:

3 logic configured to halt the converting of the analog signal presented at each of
4 the remaining portion of the input terminals associated with the first request, wherein the
5 converter is configured to convert an analog signal presented at each of a portion of the input
6 terminals associated with the third request in succession into a digital value until the one of the
7 input terminals associated with the second request is reached; and

8 logic configured to wait a second predetermined amount of time to receive a
9 fourth request associated one of the input terminals associated with the third request, wherein the
10 converter is configured to convert an analog signal presented at each of a remaining portion of
11 the input terminals associated with the third request in succession into a digital value when one
12 of an expiration of the second predetermined amount of time and a receiving of the fourth
13 request occurs.

1 7. The system of claim 1, wherein the converter is configured to receive the first and
2 second requests on respective signal lines.

1 8. The system of claim 1, wherein the plurality of the input terminals associated with
2 the first request is changeable prior to an occurrence of the first request, and the one of the input
3 terminals associated with the second request is one of changeable and fixed prior to an
4 occurrence of the second request.

- 1 9. A method for analog-to-digital signal conversion, the method comprising:
 - 2 associating a first request with a plurality of input terminals and a second request
 - 3 with one of the input terminals;
 - 4 converting an analog signal presented at each of a portion of the input terminals
 - 5 associated with the first request in succession into a digital value until the one of the input
 - 6 terminals associated with the second request is reached;
 - 7 waiting a predetermined amount of time to receive the second request; and

1 10. The method of claim 9, wherein when the receiving of the second request occurs
2 before the expiration of the predetermined amount of time, the method comprises:
3 acknowledging a completion of the second request when the converting of the
4 analog signal presented at each of the input terminals associated with the first request is
5 complete.

1 11. The method of claim 9, wherein when the receiving of the second request occurs
2 after the expiration of the predetermined amount of time, the method comprises:
3 denying the second request when received before completing the converting of
4 the analog signal presented at each of the input terminals associated with the first request.

1 12. The method of claim 9, wherein when a third request associated with a plurality
2 of input terminals is received while converting the analog signal presented at each of the
3 remaining portion of the input terminals associated with the first request, the method comprises:
4 determining a priority between the converting of the analog signal presented at
5 each of the remaining portion of the input terminals associated with the first request and the third
6 request.

1 13. The method of claim 12, wherein when the converting of the analog signal
2 presented at each of the remaining portion of the input terminals associated with the first request
3 has the priority, the method comprises:
4 denying the third request.

1 14. The method of claim 12, wherein when the third request has the priority, the
2 method comprises:

3 halting the converting of the analog signal presented at each of the remaining
4 portion of the input terminals associated with the first request;

5 converting an analog signal presented at each of a portion of the input terminals
6 associated with the third request in succession into a digital value until the one of the input
7 terminals associated with the second request is reached;

8 waiting a second predetermined amount of time to receive a fourth request
9 associated one of the input terminals associated with the third request; and

10 converting an analog signal presented at each of a remaining portion of the input
11 terminals associated with the third request in succession into a digital value when one of an
12 expiration of the second predetermined amount of time and a receiving of the fourth request
13 occurs.

1 15. The method of claim 9, wherein the plurality of the input terminals associated
2 with the first request is changeable prior to an occurrence of the first request, and the one of the
3 input terminals associated with the second request is one of changeable and fixed prior to an
4 occurrence of the second request.

1 16. A computer readable medium containing a computer program for analog-to-
2 digital signal conversion, wherein the computer program comprises executable instructions for:
3 associating a first request with a plurality of input terminals and a second request
4 with one of the input terminals;
5 converting an analog signal presented at each of a portion of the input terminals
6 associated with the first request in succession into a digital value until the one of the input
7 terminals associated with the second request is reached;
8 waiting a predetermined amount of time to receive the second request; and
9 converting an analog signal presented at each of a remaining portion of the input
10 terminals associated with the first request in succession into a digital value when one of an
11 expiration of the predetermined amount of time and a receiving of the second request occurs.

1 17. The computer readable medium of claim 16, wherein when the receiving of the
2 second request occurs before the expiration of the predetermined amount of time, the computer
3 program comprises executable instructions for:
4 acknowledging a completion of the second request when the converting of the
5 analog signal presented at each of the input terminals associated with the first request is
6 complete.

1 18. The computer readable medium of claim 16, wherein when the receiving of the
2 second request occurs after the expiration of the predetermined of amount of time, the computer
3 program comprises executable instructions for:
4 denying the second request when received before completing the converting of
5 the analog signal presented at each of the input terminals associated with the first request.

1 19. The computer readable medium of claim 16, wherein when a third request
2 associated with a plurality of input terminals is received while converting the analog signal
3 presented at each of the remaining portion of the input terminals associated with the first request,
4 the computer program comprises executable instructions for:

5 determining a priority between the converting of the analog signal presented at
6 each of the remaining portion of the input terminals associated with the first request and the third
7 request.

1 20. The computer readable medium of claim 19, wherein when the converting of the
2 analog signal presented at each of the remaining portion of the input terminals associated with
3 the first request has the priority, the computer program comprises executable instructions for:
4 denying the third request.

1 21. The computer readable medium of claim 16, wherein when the third request has
2 the priority, the computer program comprises executable instructions for:

3 halting the converting of the analog signal presented at each of the remaining
4 portion of the input terminals associated with the first request;

5 converting an analog signal presented at each of a portion of the input terminals
6 associated with the third request in succession into a digital value until the one of the input
7 terminals associated with the second request is reached;

8 waiting a second predetermined amount of time to receive a fourth request
9 associated one of the input terminals associated with the third request; and

10 converting an analog signal presented at each of a remaining portion of the input
11 terminals associated with the third request in succession into a digital value when one of an
12 expiration of the second predetermined amount of time and a receiving of the fourth request
13 occurs.